Workplan for Fiscal Year 2003

September 20, 2002

I. Program Title. Anadromous Fish Restoration Program (AFRP) - Central Valley Project Improvement Act (CVPIA) 3406(b)(1)

II. Responsible Entities.

	Agency	Staff Name	Role
Lead	USFWS	Vacant	Program Manager, Anadromous Fish Restoration Program
	USBR	Ken Lentz	Program Liaison, United States Bureau of Reclamation(USBR)/Anadromous Fish Restoration Program
	USFWS	John Icanberry	Assistant Program Manager; also assigned to Butte and Big Chico creeks
	USFWS	Tricia Parker	Habitat Restoration Coordinator; assigned to Cow, Battle, Antelope, Mill, Deer, and Cottonwood creeks
	USFWS	Jack Williamson	Assistant Habitat Restoration Coordinator; assigned to Cow, Battle, Antelope, Mill, Deer, and Cottonwood creeks
	USFWS	Craig Fleming	Habitat Restoration Coordinator; assigned to Feather, Yuba, Bear and American rivers
	USFWS	Gonzalo Castillo	Habitat Restoration Coordinator; assigned to Cosumnes, Calaveras, Mokelumne rivers and the Sacramento-San Joaquin Delta
	USFWS	Cesar Blanco	Habitat Restoration Coordinator; assigned to Merced, Stanislaus, Tuolumne and San Joaquin rivers
	USFWS	Jeff McLain	Habitat Restoration Coordinator; assigned to the Merced, Stanislaus, Tuolumne and San Joaquin rivers
	USFWS	John Wikert	Assistant Habitat Restoration Coordinator, assigned to Merced, Stanislaus, Tuolumne and San Joaquin rivers
	USFWS	David Hu	Assistant Habitat Restoration Coordinator, assigned to Cosumnes, Calaveras, Mokelumne rivers and the Sacramento-San Joaquin Delta

III. Program Objectives for FY 2003

The objectives for the Anadromous Fish Restoration Program (AFRP) were originally developed as part of the effort to draft the Restoration Plan for the AFRP and can be found in the Final Restoration Plan for the AFRP United States Fish and Wildlife Service (USFWS 2001). These objectives are listed below.

A. Improve habitat for all life stages of anadromous fish through provision of flows of suitable quality, quantity, and timing, and improved physical habitat;

B. Improve survival rates by reducing or eliminating entrainment of juveniles at diversions;

C. Improve the opportunity for adult fish to reach their spawning habitats in a timely manner;

D. Collect fish population, health, and habitat data to facilitate evaluation of restoration actions;

E. Integrate habitat restoration efforts with harvest and hatchery management; and involve partners in the implementation and evaluation of restoration actions.

The AFRP is one of five Central Valley Project Improvement Act (CVPIA) programs being integrated with the CALFED Ecosystem Restoration Program (ERP). To facilitate this integration, the above objectives are included in the CALFED ERP Draft Stage 1 Implementation Plan. These objectives are also complementary to other goals and objectives listed in the Draft Stage 1 Implementation Plan and would help address the objectives of the CALFED Multi-Species Conservation Strategy and the CVPIA Biological Opinion.

Because the AFRP is being integrated with the ERP, the AFRP cannot identify all of the projects that the program will support in the coming year. However, the AFRP has accepted seven CALFED ERP directed action projects. AFRP Habitat Restoration Coordinators will manage the CALFED Selection and Technical panels recommended improvements and refinements for further CALFED funding consideration. The AFRP expects to identify additional projects for AFRP funding.

The results of an AFRP conducted restoration objective gap analysis are presented for each of the Central Valley watersheds. This comprehensive analysis was developed using the Final Restoration Plan for the AFRP United States Fish and Wildlife Service (USFWS 2001) and the Working Paper on Restoration needs (1995), and identifies project targets for future funding. A specific prioritized project selection process for FY 2003 has yet to be completed. In the first months of FY 2003, a more specific list of prioritized objectives and project targets, amongst watersheds will be developed from which specific FY 2003 projects will be identified, developed and funded.

Some objectives do not identify project targets at this time. Projects supporting these gaps may be identified in future annual analyses or by opportunity. This is considered an ongoing process that will be documented annually in future AFRP Annual Work Plans with the intention of integrating AFRP project priorities into established processes such as the CALFED PSP.

The AFRP's objectives and project targets follow.

Central Valley-wide

1. Objective: Understand salmon and steelhead life history characteristics and population structures in Central Valley streams.

Project gap: Develop an understanding of salmon and steelhead life history and population structures in Central Valley streams.

Project target: 1) CALFED #13: Central Valley Steelhead Population Structure Evaluation; 2) CALFED #123: Assessment of Life-History Characteristics and Genetic Composition of *Oncorhynchus mykiss*; 3) steelhead workshop; and 4) sonic tagging and tracking of yearling *Oncorhynchus mykiss*.

2. Objective: Expand the distribution of steelhead in the Central Valley.

Project gap: Survey Central Valley watersheds to identify additional steelhead habitat.

Project target: Identify streams without steelhead targets to potentially support steelhead.

3. Objective: Reduce loss of Chinook salmon smolts due to predation.

Project gap: Facilitate activities to identify actions to reduce predation on juvenile salmonids.

Project target: 1) San Joaquin basin Chinook salmon smolt predation workshop; and 2) CALFED #157: Effects of Predation Dynamics on Outmigrating Salmon in the Delta.

4. Objective: Increase natural production of anadromous fish through educational outreach programs.

Project gap: Expand and support public outreach and watershed education programs.

Project target: 1) CALFED #164: Working at a Watershed Level: a training course for project partners and stakeholders; and 2) AMF planning team response to AMF review panel reports (see Austiguy et al. 2001 and Bilby et al. 2002).

5. Objective: Insure continued long-term salmonid life history evaluations both within and beyond the Central Valley.

Project gap: Facilitate actions to mark and/or tag all hatchery produced salmonids within the Central Valley.

Project target: Support existing efforts to provide marking and/or tagging of all Central Valley hatchery produced salmonids.

6. Objective: Insure continued long-term life history evaluation of green sturgeon in the Central Valley.

Project gap: Conduct sturgeon life history studies in the Central Valley.

Project target: CALFED#193: Biological assessment of green sturgeon in the Sacramento-San Joaquin watershed.

7. Objective: Increase natural production of anadromous fish through improved spawning and rearing habitat quality and quantity.

Project gap: Evaluate the feasability of actions to restore and improve small tributaries.

Project target: 1) Fund small tributary restoration projects as available; and 2) Conduct Adaptive Management Forums to evaluate watershed level restoration.

8. Objective: Reduce detrimental effects of introduced fish on anadromous fish.

Project gap: Evaluate effects of non-native species on anadromous fish.

Project target: 1) Study gut contents of non-native species to determine if they are competing with or predating upon anadromous fish.

Upper mainstem Sacramento River and upper Sacramento River tributaries

Upper mainstem Sacramento River

1. Objective: Enhance natural mainstem river function and restore available flood plain habitat in the upper Sacramento River meander corridor.

Project gap: Repair erosion problems and restore available floodplain habitat in the upper Sacramento River meander corridor.

Project target: 1) Remove levees and restore flood plain function at the La Barranca Unit, Sacramento River NWR; 2) restore pits and mounds resulting from past gravel mining operation at the La Barranca Unit, Sacramento River NWR; 3) implement weed control project at the La Barranca Unit, Sacramento River NWR; 4) CALFED #170: Restoration of the Confluence Area of the Sacramento River, Big Chico and Mud Creeks; and 5)CALFED #171: Sacramento River Restoration: Chico Landing Sub-Reach(RM 178-206).

Cow Creek

1. Objective: Enhance instream flow for fish life history requirements.

Project gap: Monitor stream flow and temperature and relate to abundance and migration timing of anadromous salmonids.

Project target: CALFED #250: 1) install water temperature recorders at select locations; 2) monitor adult salmon and steelhead abundance; 3) collect flow data from existing gages or install new real-time flow gages; and 4) develop recommendations for minimum instream flow based on temperature needs and timing of salmon and steelhead migrations.

2. Objective: Improve downstream passage of juvenile salmon and steelhead and upstream passage of adults in Cow Creek and its tributaries.

Project gap: Construct fish screens and ladders, and conduct feasibility analyses for screening and laddering other agriculture water diversions.

Project target: CALFED #251: 1) install a new fish screen and ladder on one agriculture

water diversion that serves as a demonstration project; and 2) conduct feasibility analyses for screening and laddering five other agriculture water diversions.

3. Objective: Improve salmonid passage, spawning, and rearing in Cow Creek through increased stakeholder involvement.

Project gap: Support development of a watershed management plan for Cow Creek; Estimate the numbers of juvenile salmonids produced in the watershed.

Project target: 1) Develop a watershed management plan; 2) prioritize restoration actions in the watershed using a local perspective; and 3) monitor fish populations.

Battle Creek

1. Objective: Prevent loss of juvenile Chinook and steelhead on Battle Creek due to entrainment.

Project gap: Screen water diversions on Battle Creek; Upgrade screens for the Coleman NFH water supply.

Project target: CALFED #224: 1) Complete structural repairs to intake #1; 2) construct a diversion sill below intake #2; 3) construct access way to intake #2; and 4) construct a fish screen and modify the site at intake #3.

2. Objective: Enhance and insure anadromous fish population evaluation and monitoring in Battle Creek.

Project gap: Conduct fish population, health, and habitat monitoring in Battle Creek.

Project target: 1) Evaluate juvenile Chinook and steelhead life history by using rotary screw traps throughout the year; 2) survey spawner populations; 3) collect fish tissue samples for disease incidence; 4) survey and quantify available habitat using established methods; and 5) CALFED #166: Battle Creek Protection and Stewardship.

3. Objective: Insure continued evaluations and survival of steelhead populations in Battle Creek.

Project gap: Conduct steelhead population, health, and habitat monitoring in Battle Creek.

Project target: 1) Conduct spawner surveys for steelhead; 2) continue rotary screw trapping for juvenile life history, estimate spawner success, and estimate steelhead population abundance; and 3) integrate restoration efforts with hatchery and harvest management.

Cottonwood Creek

1. Objective: Improve instream flows to increase natural production of salmonids.

Project gap: Monitor stream flow and temperature and relate to abundance and timing of anadromous salmonids.

Project target: CALFED #49: 1) collect flow and temperature data from existing gages or newly installed real-time gages; 2) determine upstream geographic distribution and timing of adult Chinook salmon; 3) determine timing and abundance of downstream migrating juvenile salmonids; and 4) develop recommendations for minimum instream flow based on temperature needs and timing of salmon and steelhead migrations.

2. Objective: Develop and encourage conceptual design alternatives toward river channel restoration projects to encourage natural processes and yield benefits for both environmental and human uses within Cottonwood Creek basin.

Project gap: Develop, screen, and evaluate restoration projects in consultation with stakeholders and agency staff; submit preferred alternatives for NEPA/CEQA review processes; complete final design and permitting, and develop monitoring plans to evaluate success and shortcomings.

Project target: CALFED #50: 1) Develop, screen, and evaluate conceptual design alternatives in consultation with stakeholders and agency staff; 2) submit preferred alternative for NEPA/CEQA review processes; 3) complete final design and permitting; and 4) develop monitoring plan to evaluate success and shortcomings.

3. Objective: Increase salmonid natural production in Cottonwood Creek through increased stakeholder involvement.

Project gap: Support development of a watershed management plan for Cottonwood Creek; Estimate the numbers of juvenile salmonids produced in the watershed.

Project target: 1) Develop a watershed management plan; 2) prioritize restoration actions in the watershed using a local perspective; and 3) monitor fish populations.

Bear Creek

1. Objective: Provide educational outreach and local involvement in restoration.

Project gap: Promote community support for a local Bear Creek watershed group.

Project target: 1) Prepare a water quality monitoring study plan; 2) prepare a redd and carcass survey protocol; 3) conduct training session for residents involved in surveys; 4) conduct a redd survey (fall 2002); and 5) provide educational workshops for kids and adults to address watershed issues.

Mill Creek

1. Objective: Conserve and restore riparian habitat to provide adequate streambank rearing habitat in the lower Mill Creek watershed.

Project gap: Acquire and preserve riparian conservation easements and fee properties along Mill Creek.

Project target: Acquire riparian easements and fee properties.

2. Objective: Improve stream passage for steelhead and juvenile Chinook salmon.

Project gap: Develop groundwater exchange capability for increased instream surface flows in Mill Creek.

Project target: Support the development of a groundwater exchange program.

3. Objective: Stabilize and/or reduce sediment loads to improve natural spawning of fall-run Chinook salmon in the upper sections of Mill Creek.

Project gap: Develop engineering solutions to erosion problems in the Mill Creek watershed.

Project target: 1) Using engineering solutions, reduce stream down cutting and bank erosion; 2) build sediment retention structures; and 3) transplant native vegetation to fortify stream banks.

4. Objective: Improve and facilitate passage for spring-run Chinook salmon and steelhead after the irrigation season begins.

Project gap: Develop an adult salmon passage study to address issues affecting the passage of adult and juvenile spring-, fall- and late-fall-run Chinook salmon and steelhead in Mill Creek.

Project target: Develop a Mill Creek adult salmon passage study.

Deer Creek

1. Objective: Conserve, restore, and stabilize riparian areas to provide adequate spawning and rearing habitats in lower Deer Creek.

Project gap: Construct bank stabilizing devices and re-vegetate eroding banks in lower Deer Creek.

Project target: 1) Construct "bio-engineered" erosion control devices on the Robinson Property; 2) transplant native vegetation to control erosion on the Robinson Property; and 3) CALFED #53: Lower Deer Creek Restoration and Flood Management: Feasibility Study and Conceptual Design.

2. Objective: Conserve, restore, and stabilize riparian areas to provide adequate spawning and rearing habitats in Deer Creek.

Project gap: Negotiate cooperative agreements to increase bank stability on Guernsey Creek and other upper Deer Creek meadow habitats.

Project target: 1) Reduce bank sloughing and stream down cutting; 2) build sediment retention structures; and 3) transplant native vegetation to fortify stream banks.

3. Objective: Improve passage for spring-run Chinook salmon and steelhead in Deer Creek.

Project gap: Facilitate passage for spring-run Chinook salmon and steelhead after May 15th or after beginning of irrigation season.

Project target: Develop a Deer Creek adult salmon passage study.

Butte Creek

1. Objective: Improve fish passage and screen diversions on White Mallard Dam and associated diversions.

Project gap: Construct fish passage and protection facilities in the Lower Butte Creek.

Project target: 1) CALFED #59: White Mallard Dam and associated diversion- phase III, (managed by Bill O'Leary, BOR); 2)Lower Butte Creek Project: Sutter Bypass - Willow Slough Weir Fish Passage Project - Preliminary Engineering Investigation; and 3) Butte Sink Water Control Structure Modifications - Phase III Construction.

2. Objective: Insure continued long-term life history evaluation of Butte Creek salmonid juveniles.

Project gap: Understand anadromous fish salmonid life history characteristics in Butte Creek.

Project target: 1) Continue to evaluate the juvenile life history of spring-run Chinook salmon in Butte Creek; and 2) increase numbers of CWT juveniles, compensate for State funding cuts, and fund through 2005.

3. Objective: Enhance instream flow for fish life history requirements.

Project gap: Develop flow recommendations and obtain additional flows for anadromous fish passage.

Project target: 1) Facilitate finalizing the change in use of the Upper Butte Basin Wildlife Area water right from agriculture to in stream use; and 2) purchase additional permanent water rights from willing sellers for in stream use.

4. Objective: Insure sufficient flows for salmonids below Centerville Diversion Dam.
Project gap: Install and maintain "real-time" flow metering; Monitor minimum 45 cfs of dedicated instream fish water throughout Butte Creek.

Project target: Add or change locations of certain flow gages in Sutter Bypass.

5. Objective: Provide a permanent buffer zone between Butte creek and agricultural, urban, and industrial developments below Centerville Diversion Dam to Butte Sink.

Project gap: Conduct riparian restoration and repair erosion problems.

Project target: Acquire riparian properties from willing sellers.

Big Chico Creek

1. Objective: Improve fish passage through Big Chico Creek.

Project gap: Construct fish passage and protection facilities in Big Chico Creek.

Project target: 1) Iron Canyon and Bear Hole Fish Passage Project; and 2) Big Chico Creek- Habitat restoration and Fish Passage Improvement Project.

2. Objective: Insure continued long-term life history evaluation of Big Chico Creek salmonid juveniles.

Project gap: Continue habitat restoration and Fish Passage Improvement Project; conduct anadromous salmonid life history study.

Project target: 1) Continue to evaluate the juvenile life history of spring-run chinook salmon in Big Chico Creek; and 2) increase numbers of CWT juveniles, compensate for state funding cuts, and fund through 2005.

3. Objective: Introduce trapped gravels from man-made structures back into Big Chico Creek.

Project gap: Introduce spawning gravels lost behind One-Mile Dam and the Lindo Channel complex at Five-Mile Diversion.

Project target: 1) Big Chico Creek- habitat restoration; and 2) fish passage improvement project (this project addresses both passage and gravel replenishment in Big Chico Creek).

4. Objective: Provide a permanent buffer zone between the creek and agricultural, urban, and industrial developments on Big Chico Creek.

Project gap: Conduct riparian restoration and repair erosion problems.

Project target: Acquire riparian properties from willing sellers.

Lower Sacramento River and Delta tributaries

Feather River

1. Objective: Improve instream flows for all life history stages of salmonids to increase natural production in the Feather River.

Project gap: Develop flow recommendations and obtain additional flows for anadromous salmonid passage; Evaluate and develop corrective measures to address juvenile and adult stranding in side pools.

Project target: Oroville Dam Federal Energy Regulatory Commission (FERC) negotiated relicensing study plan.

2. Objective: Provide and insure suitable water temperatures for American shad and salmonids in the Feather River.

Project gap: Develop a temperature model to understand the impacts of temperature on anadromous fishes.

Project target: Oroville Dam FERC negotiated relicensing study plan.

3. Objective: Reduce loss of genetic integrity due to introgression.

Project gap: Develop a plan to promote isolation of spring- and fall-run Chinook salmon spawners.

Project target: Oroville Dam FERC negotiated relicensing study plan.

4. Objective: Insure continued green sturgeon and white sturgeon evaluation and survival in the Feather River.

Project gap: Assess value and correlate available habitat in the Feather River to existing sturgeon populations, identify barriers and other limiting factors to sturgeon use on the Feather River.

Project target: Oroville Dam FERC negotiated relicensing study plan.

5. Objective: Improve instream flows to increase sturgeon and American shad natural production in the Feather River.

Project gap: Develop flow recommendations and obtain additional flows for sturgeon and American shad passage.

Project target: Oroville Dam FERC negotiated relicensing study plan.

Yuba River

1. Objective: Improve fish passage on the Yuba River through Daguerre Point Dam.

Project gap: Modify and maintain appropriate flows through the Daguerre Point Dam fish ladders.

Project target: 1) Fish passage improvement at Daquerre Point Dam; and 2) monitor adult fish passage through Daguerre Dam fish ladder.

2. Objective: Reduce damage and entrainment of juvenile salmonids due to pump and riparian diversion intakes.

Project gap: Improve and construct screen and bypasses at South Yuba-Brophy Headworks.

Project target: CALFED #124: Fish Screen Feasibility and Interim Fish Protection Measures for Diversion Facilities of the South Yuba and Brophy Water Districts.

3. Objective: Provide and maintain proper flow regime and temperature for all life history stages of Chinook salmon and steelhead.

Project gap: Acquire and maintain flows to provide proper flow regime and temperature for all life stages of salmonids in the Yuba River.

Project target: 1) Yuba River D-1644 settlement process; 2) CALFED and CVPIA Environmental Water Accounts.

4. Objective: Improve spawning habitat to increase salmonid natural production in the Yuba River.

Project gap: Implement gravel additions in upper reaches of the Yuba River.

Project target: 1) Gravel additions above and below Narrows Pool; and 2) gravel model transfer to Yuba River Narrows Reach.

5. Objective: Restore proper river function and conserve riparian areas to provide adequate streambank and channel rearing habitat for juvenile salmonids.

Project gap: Acquire and preserve riparian conservation easements and fee properties along the Yuba River.

Project target: 1) Projects to be determined from YRTWG Implementation Plan; and 2) spring-run Chinook salmon habitat feasibility study.

Bear River

1. Objective: Enhance instream flow for fish life history requirements.

Project gap: Develop flow recommendations and obtain additional flows for anadromous fish passage.

2. Objective: Involve partners in the implementation and evaluation of restoration actions.

Project gap: Promote community support for a local Bear River watershed group.

Project target: Promote community support and initiate watershed planning in the Bear River watershed.

3. Objective: Improve stream passage for listed species of anadromous fish.

Project gap: Conduct fish barrier evaluation studies and recommend solutions for improvement.

4. Objective: Insure and improve life history evaluations of sturgeon in the Bear River.

Project gap: Evaluate white sturgeon and green sturgeon use of the Bear River for spawning and rearing.

5. Objective: Enhance instream flows to insure adequate flows for all life stages of all salmonids.

Project gap: Determine and evaluate instream flow requirements to insure adequate flows for all life stages of all salmonids.

6. Objective: Improve passage to protect all life history stages of anadromous fish in the Bear River.

Project gap: Screen water diversions on the Bear River.

American River

1. Objective: Provide and insure suitable water temperature conditions required for salmonids and American shad survival.

Project gap: Develop water temperature model.

Project target: CALFED #174: Lake Natoma Temperature Curtains Pilot Project.

2. Objective: Improve instream flows to provide spawning and rearing habitat for juvenile salmonids.

Project gap: Evaluate, provide recommendations, and participate in interagency activities to develop proper flow regimes in the American River.

Project target: USBR and Water Forum study.

3. Objective. Improve habitat for all life stages of anadromous fish through provision of flows of suitable quality, quantity, and timing, and improved physical habitat.

Project Gap: Support and cooperate in inter-agency efforts towards anadromous fish habitat improvement.

Project target: Support and influence RCMP study outcomes.

Mokelumne River

1. Objective: Enhance instream flow for steelhead life history requirements.

Project gap: Acquire additional flows from willing sellers to enhance steelhead runs.

Project target: 1) Assess which life stages of steelhead and Chinook salmon are most limited by current flows and temperatures and identify water requirements not currently available; and 2) negotiate water right purchases and/or increase flow releases from Camanche Dam.

2. Objective: Improve salmonid spawning habitat below Camanche Dam.

Project gap: Determine optimal design for gravel replenishment in Central Valley rivers and continue enhancing spawning habitat.

Project target: 1) Mokelumne River Spawning Habitat Rehabilitation Project; and 2) Mokelumne River Spawning Habitat Improvement.

3. Objective: Prevent losses of juvenile salmonids due to reduced flow and/or high temperatures.

Project gap: Monitor flow releases from Camanche Dam to assess effects on downstream salmonid migrants.

Project target: Determine juvenile steelhead and Chinook salmon survival for different flows and temperatures in several water-year types and recommend operational changes.

4. Objective: Insure and restore riparian corridors and streambank habitat for rearing juvenile salmonids.

Project gap: Negotiate and acquire riparian easements and improve riparian habitats.

Project target: 1) Identify opportunities for easements and prioritize areas for riparian restoration; and 2) acquire easements from willing sellers and purchase land to enhance riparian habitat.

Cosumnes River

1. Objective: Provide instream flows to increase natural production of fall-run Chinook salmon.

Project gap: Acquire permanent water rights or reduce water diversions.

Project target: 1) Flow requirement and water acquisition feasibility for fall-run Chinook salmon in the Cosumnes River; 2) acquire water rights from willing sellers to insure adequate flows for all life stages of fall-run Chinook salmon; and 3) negotiate agreements with landowners, state, local and federal agencies to prevent further water diversions.

2. Objective: Conserve and restore riparian areas to provide adequate streambank and channel rearing habitat for juvenile salmon.

Project gap: Acquire easements and purchase land and restore riparian habitat and fluvial processes; Monitor permit requests to modify riparian habitats.

Project target: 1) Pursue opportunities to acquire easements or buy property to improve riparian habitats; 2) acquire lands and easements to improve riparian habitat; and 3) prevent/control further use of rip-rap to stabilize river banks.

3. Objective: Improve downstream passage for Chinook salmon.

Project gap: Assess relations between flow and egg-juvenile survival and fry-juvenile mortality due to predation.

Project target: 1) Determine the need for a predator control plan to reduce fry and juvenile salmon mortality by non-indigenous fishes; and 2) determine survival of juvenile Chinook salmon in different water-year types.

4. Objective: Increase and improve available spawning and rearing habitat for fall-run Chinook salmon.

Project gap: Assess the quality of spawning and rearing habitat below and above Granlees diversion dam.

Project target: 1) Determine carrying capacity of current and potential spawning habitat; 2) determine carrying capacity of current and potential fry and juvenile rearing habitats; and 3) increase available spawning and rearing habitat.

Calaveras River

1. Objective: Improve instream flows to increase natural production of salmonids.

Project gap: Determine and purchase adequate flows to support runs of steelhead and fall- and spring-run Chinook salmon below New Hogan Dam.

Project target: 1) Calaveras River salmonid passage study; and 2) negotiate agreements with landowners, SEWD, CCWD, and federal and state agencies to acquire additional flows or purchase water rights.

2. Objective: Restore and improve upstream and downstream salmonid passage in the Calaveras River.

Project gap: Evaluate best upstream and downstream migration corridor for salmonids between the Delta and Bellota Weir; Restore passage to spawning grounds above Bellota Weir and downstream passage to the Delta for steelhead and fall- and spring-run Chinook salmon.

Project target: 1) Retrofit the Bellota Weir fish ladder and monitor upstream and downstream salmonid passage; and 2) Phase I of negotiation with stakeholders for a permanent upstream and downstream passage to salmonids (Old Calaveras River vs. Mormon Slough).

3. Objective: Improve and insure survival for all salmonid life stages.

Project gap: Determine steelhead and fall-run Chinook salmon limiting factors in the Calaveras River.

Project target: 1) Continuation of the Lower Calaveras River salmonid life history limiting factor analysis: recommendations to restore anadromous fish habitat; and 2) Phase I restoration of the Calaveras River.

4. Objective: Reduce loss of anadromous fish fry, juveniles, and smolts due to diversions.

Project gap: Assess screen design efficiency.

Project target: Test effectiveness of different fish screens to minimize fish impingement.

San Joaquin Basin

Mainstem San Joaquin River

1. Objective: Provide water oxygen levels suitable for Chinook salmon migrating through the lower San Joaquin River.

Project gap: Maintain a 6 mg/L dissolved oxygen standard during September through November in the San Joaquin River between Turner Cut and Stockton.

Project target: 1) CALFED #143: Restoration planning for watersheds impacting low dissolved oxygen conditions in the Lower San Joaquin River near Stockton; 2) CALFED #187: Adaptive Real-Time Forecasting and Sustainable Management of Dissolved Oxygen in the San Joaquin River and Stockton Deep Water Ship Channel; and 3) Lower San Joaquin River flow supplementation.

2. Objective: Provide suitable water quantity and quality for salmonids in the lower San Joaquin River.

Project gap: Develop the San Joaquin Basin Water Supply Plan.

Project target: San Joaquin Basin water supply plan development.

3. Objective: Improve survival for Chinook salmon, American shad, and steelhead trout through maintenance of suitable water flow and temperature.

Project gap: Identify and attempt to implement actions that will maintain sufficient flow and mean daily water temperatures between 61EF and 65EF for at least one month from April 1 to June 30.

Project target: San Joaquin Basin integrated water temperature and flow study.

4. Objective: Conserve, restore, and provide access to adequate riparian rearing habitat for juvenile salmonids.

Project gap: Acquire and enhance riparian easements for salmonids.

Project target: 1) Acquire riparian habitat parcels from willing sellers; and 2) San Joaquin River National Wildlife Refuge non-structural restoration design engineering.

5. Objective: Reduce loss of juvenile Chinook salmon due to pump and riparian diversion intakes.

Project gap: Construct fish screens at diversion intakes on the lower San Joaquin River by implementing the Anadromous Fish Screen Program CVPIA 3406(b)(21) in conjunction with other programs.

Project target: Support design and construction of pump and diversion screens.

Tuolumne River

1. Objective: Enhance instream flow for Chinook and steelhead life history requirements to increase natural production of salmonids.

Project gap: Acquire additional flows and maintain flows at levels needed by anadromous salmonids.

Project target: 1) Tuolumne River flow supplementation; and 2) determine the effectiveness of pulse flows.

2. Objective: Provide suitable water temperatures for Chinook salmon and steelhead.

Project gap: Monitor and insure a water temperature of 56EF between October 15 to February 15 and 65EF from April 1 to May 31.

Project target: Tuolumne River temperature monitoring and adjustment.

3. Objective: Enhance river management by better understanding life history requirements of Chinook salmon and steelhead.

Project gap: Determine egg-fry survival rates, rearing habitat preferences, and growth rates of Chinook salmon and steelhead.

Project target: 1) Juvenile salmon habitat utilization and ecology; and 2) steelhead trout abundance and distribution.

4. Objective: Restore proper river function and improve spawning and rearing habitat for anadromous salmonids.

Project gap: Replenish spawning gravel and reduce sedimentation; Acquire instream and riparian habitat for salmonid use.

Project target: 1) CALFED #181: Warner-Deardorff Segment; 2) CALFED #179 Tuolumne River - Big Bend project; and 3) Bobcat Flat restoration project.

5. Objective: Prevent losses of juvenile fish due to pump diversion intakes.

Project gap: Construct fish screens at diversion intakes on the Tuolumne River.

Project target: Tuolumne River diversion screening.

6. Objective: Increase public involvement in river management.

Project gap: Establish a "streamwatch" program to increase public participation in river management.

Project target: Tuolumne River stakeholder group development and facilitation.

Stanislaus River

1. Objective: Enhance and insure proper instream flows for salmonid migration and rearing in the Stanislaus River.

Project gap: Identify and provide appropriate water flow for critical salmonid life history stages.

Project target: 1) Evaluate fall pulse flow benefits for salmonid attraction and passage; and 2) Evaluate flows for out-migration, passage and rearing of salmonids.

2. Objective: Improve juvenile salmonid downstream passage through reduced loss from entrainment or predation.

Project gap: Identify and construct diversion intake screens, and isolate ponded sections of the river.

Project target: 1) Identify all diversions in need of screens and any migration impediments; and 2) isolate ponded areas.

3. Objective: Restore proper river function and improve spawning habitat to increase natural production of anadromous salmonids.

Project gap: Develop geomorphic and restoration assessments and implement sediment

restoration actions.

Project target: 1) CALFED #40: Frymire Ranch project, spawning habitat restoration in the Stanislaus River; 2) gravel addition, floodplain restoration and monitoring at Knights Ferry; 3) gravel addition and monitoring at Lovers Leap; and 4) identify sediment problems and create a management plan with potential solutions.

4. Objective: Restore suitable rearing habitat and reduce migration impediments for juvenile salmon in the Stanislaus River.

Project gap: Acquire and restore riparian easement and acquisitions.

Project target: Acquire riparian land and easements from willing sellers as available.

5. Objective: Insure and improve long-term life history evaluation of Chinook salmon in the Stanislaus River.

Project gap: Evaluate limiting factors for salmon and steelhead in the Stanislaus River.

Project target: 1) CALFED #125: Proposal to coded-wire tag wild juvenile Chinook salmon to determine contribution of fry, parr and smolt emigrants to adult recruitment from the San Joaquin Basin; and 2) conduct a limiting factors analysis for salmon and steelhead.

6. Objective: Improve and insure best river management through adaptive management and increased public involvement.

Project gap: Establish and develop watershed stewardship, management and restoration plans.

Project target: 1) CALFED #122: A plan for adaptive management studies for the Stanislaus River Basin; 2) continue development of a watershed stewardship program; 3) create a comprehensive restoration plan using stakeholder input; and 4) establish a watershed management plan.

7. Objective: Improve juvenile salmonid downstream migration through reduced predation.

Project gap: Develop strategy to reduce predation on juvenile salmonids.

Project target: CALFED #177: Three Year Evaluation of Predation in the Stanislaus River

Merced River

1. Objective: Enhance instream flow for Chinook and steelhead life history requirements.

Project gap: Acquire additional flows and maintain flows at levels needed by anadromous salmonids.

Project target: Merced River flow supplementation.

2. Objective: Reduce loss of Chinook salmon due egg mortality, redd dewatering, and juvenile stranding in the Merced River.

Project gap: Evaluate fall pulse flows for attraction and passage benefits to Chinook salmon.

Project target: Evaluation of fall pulse flows on life stages of Chinook salmon.

3. Objective: Insure long-term life history evaluations of Chinook salmon.

Project gap: Determine egg-fry survival rates, rearing habitat preferences, and growth rates of Chinook salmon in the Merced River.

Project target: Juvenile Chinook salmon habitat utilization and ecology.

4. Objective: Restore proper river function and improve spawning habitat for anadromous salmonids.

Project gap: Replenish spawning gravel and reduce sedimentation. Acquire instream and riparian habitat for salmonid use.

Project target: 1) CALFED #158: Dredger Tailings Reach Restoration; 2) future riparian habitat acquisitions; and 3) evaluate spawning habitat use by Chinook salmon in the Robinson Reach of the Merced River.

5. Objective: Prevent losses of juvenile fish due to pump and riparian diversion intakes.

Project gap: Construct fish screens at diversion intakes on the Merced River.

Project target: Merced River diversion screening.

IV. Status of the Program

The Final Restoration Plan for the Anadromous Fish Restoration Program (Restoration Plan) was developed to guide the long-term development of the AFRP. The Restoration Plan provides a programmatic-level description of the AFRP, and will be used to guide implementation of all sections of the CVPIA that contribute to the goal of making all reasonable efforts to at least double natural production of anadromous fish. The Restoration Plan presents the goal, objectives, and strategies of the AFRP, as well as a list of reasonable actions and evaluations to implement to make progress toward doubling natural production of anadromous fish. The Restoration Plan identifies the need for partners, local involvement, public support, adaptive management, and flexibility as key attributes of the AFRP's approach to making all reasonable efforts to at least double natural production of anadromous fish.

To implement this plan, the USFWS established five Habitat Restoration Coordinator (HRC) positions, each assigned a specific geographic area within California's Central Valley. In their assigned area, each HRC represents the AFRP, develops and nurtures partnerships, develops projects with partners that contribute to making all reasonable efforts to at least double natural production of anadromous fish, and oversees all aspects of implementation of projects in which

the AFRP invests funds. In 1998, the AFRP added three more HRCs from the California Department of Fish and Game (CDFG) to this effort, one from each of the CDFG regions within the Central Valley, to provide assistance to the USFWS and to ensure close coordination with the CDFG, the State agency with primary responsibility for restoration of anadromous fish habitat. Together, the USFWS and CDFG HRCs form an interagency team to coordinate, develop and implement restoration projects consistent with the goal, objectives, strategies, processes and priorities described in the Restoration Plan.

AFRP derives specific administrative support from programs of the Sacramento Field Office, Endangered Species Program (Section 7, Biological Opinions), and the Watershed Planning Branch (NEPA, Biological Assessments).

The AFRP also retains the Energy, Planning and Instream Flow Branch (EPIF) to provide the science based studies essential to AFRP habitat restoration efforts (IFIM's, salmonid passage studies, habitat mapping, spawning surveys, etc.). The EPIF has reported its FY 2002 AFRP supported accomplishments (See attached Work Plan for Fiscal Year 2003).

The AFRP and several other CVPIA projects are functionally integrated with the CALFED ERP Proposal Solicitation Process (PSP) to select projects. As part of this functional integration, potential CALFED and AFRP and other CVPIA projects underwent concurrent scientific and technical review to ensure that the best and highest priority projects are implemented and to ensure the most efficient use of funds.

The AFRP participated in the project selection process and considered funding program-appropriate projects solicited through the CALFED ERP. The projects listed in this AWP were selected by the AFRP Program Managers and HRC's, in coordination with CALFED staff, from the list of projects recommended as directed actions by the CALFED Selection Panel. For more information on the AFRP and the AFRP's approach to project selection and implementation, see the AFRP's website at: http://www.delta.dfg.ca.gov/afrp/

Upper mainstem Sacramento River and upper Sacramento River tributaries

This AFRP geographic area extends from Cow Creek on the east side of the Sacramento River downstream to Stony Creek on the west side of the Sacramento River. There are currently five AFRP funded federal and state Habitat Restoration Coordinators (HRCs) dedicated to the upper mainstem Sacramento River. AFRP duties in this geographic region are expanding as new watershed groups become organized and greater numbers of restoration activities are started.

Restoration efforts in the upper mainstem Sacramento River and Sacramento River tributaries region have focused on the major AFRP objectives listed in Section III, Program Objectives for FY03. While spawning gravel replenishment, flow acquisition and screening projects are funded concurrently through other CVPIA programs, the AFRP funded aquatic habitat restoration, fish

passage improvements, education and outreach, and anadromous fish life history studies. The AFRP developed engineering solutions and environmental documentation for sediment and erosion control projects on the Middle and Deer Creek watersheds. Through leveraging other funding sources, the AFRP completed fish passage projects on Mill, Deer and Butte creeks and others are ongoing on Battle, lower Butte and Big Chico creeks. The Lower Butte Creek Project is divided into three phases. Phases I and II are completed. Phase I included an analysis of existing conditions and established a working group comprised of agency representatives, landowners, water district managers, managed wetland managers and non-profit representatives to identify project water control structures resulting in a list of structural modifications and proposed alternatives to improve fish passage through the various stream reaches of the Project. Phase II took the list of alternatives, selected the preferred alternative and completed the design and environmental documentation for the eventual construction. Phase III, the construction phase, is underway and will take the plans and specifications and permits from Phase II and funding from CALFED, CVPIA and the agency partners and complete construction of the preferred alternatives. On Big Chico Creek, a major acquisition was made to protect a two- mile pristine riparian corridor located adjacent to and upstream of Bidwell Park, Chico, California. Also, several large AFRP funded riparian acquisitions associated with the Sacramento River mainstem (meander belt) were accomplished. A feasibility study of restoring flood plain and riparian processes at the La Barranca Unit of the Sacramento River National Wildlife Refuge on the Sacramento River was recently completed. The AFRP also funded riparian restoration and cattle exclusion projects on several privately-owned riparian properties located on Mill and Deer creeks.

The AFRP funded a community-based Coleman National Fish Hatchery (CNFH) re-evaluation which reviewed all aspects of facility operations in order to ensure the integration of hatchery operations with AFRP-guided restoration efforts in Battle Creek. The AFRP funded watershed education, an important activity for developing local interest and long-term commitment to the local watershed resources. Other funds were provided for the Kids and Creeks: Restoration Ecology In Action Program, a restoration component of the Stream minders Education Program available to students grades 2-12 from Chico, Oroville, Paradise and Durham school districts.

The AFRP funded projects intended to provide anadromous fish restoration benefits Central Valley-wide. Some of these included genetic identification of the endangered winter-run Chinook salmon for purposes of artificial propagation and recovery of this species. AFRP also contributed to developing an automated fish tagging and marking system for juvenile fish produced at the CNFH.

Lower Sacramento River and Delta tributaries

This AFRP geographic area extends from the Feather River south to the Calaveras River. Each of the seven watersheds within this area has unique characteristics and limiting factors.

There are currently three AFRP funded federal and state HRCs dedicated to the Lower Sacramento River and Delta tributaries. AFRP duties in this geographic region are expanding as

new watershed and stakeholder groups become organized, restoration plans are developed and greater numbers of restoration activities are started.

Restoration efforts in the Lower Sacramento River and Delta tributaries region have focused on the major AFRP objectives listed in Section III, Program Objectives for FY03. As mentioned earlier, spawning gravel replenishment, flow acquisition and screening projects are funded concurrently through other CVPIA programs. However, the AFRP funded aquatic habitat restoration, fish passage improvements and anadromous fish life history studies. In addition, the AFRP is providing technical assistance in the Oroville FERC settlement process, which guides the direction of restoration efforts on the Feather River. The AFRP also provides technical input that guides river management decisions on the Yuba and American Rivers. The AFRP funded fish passage studies at Daguerre Point Dam, Yuba River, and Granlees Dam, Cosumnes River. The AFRP also funded a feasibility study for the Hallwood-Cordua Fish Screen on the Yuba River and continued supporting state of the art approaches to replenish spawning gravel in the Mokelumne River. The AFRP is funding anadromous fish life-history studies on the Calaveras and Yuba Rivers and other regional tributaries that have little or no background data.

San Joaquin Basin tributaries and mainstem San Joaquin River

This AFRP geographic area includes the Stanislaus, Tuolumne and Merced rivers including the mainstem San Joaquin River. Each of the watersheds within this AFRP geographic region has unique characteristics and limiting factors.

There are currently two AFRP funded federal and one state HRC dedicated to the San Joaquin Basin tributaries and the mainstem San Joaquin River. AFRP duties in this geographic region are expanding as new watershed and stakeholder groups become organized, restoration plans are developed and larger-scale and greater numbers of restoration activities are implemented.

Restoration efforts in the San Joaquin Basin tributaries and mainstem San Joaquin River region have focused on the major AFRP objectives listed in Section III, Program Objectives for FY03. Large-scale channel restoration projects to improve the geomorphological functions of the rivers and to control predation by bass on juvenile salmonids are also being developed and funded. On the Tuolumne River, restoration of the 7-11 reach is nearly completed. Also, on the Tuolumne River, the construction phase of the Special Run-Pool (SRP) 9 restoration project was completed this summer. On the Merced River, the AFRP funded and completed the Ratzlaff segment of the Robinson Ratzlaff Mining Reach in-channel habitat restoration project. Efforts on the Merced and Tuolumne Rivers are also focused on implementing Adaptive Management Forum findings, including project integration, life history studies and monitoring.

The AFRP is in the process of acquiring Two Mile Bar, a 50 acre riparian parcel in the salmon spawning reaches of the Stanislaus River, for protection and restoration. Once acquired, this

stretch of the river will one of several study sites used to evaluate the benefits of river and floodplain restoration

V. FY 2002 Accomplishments

Nine conservation projects were selected from the final list of CALFED approved projects and funded in Fiscal Year 2002 at a cost of $2,830,721:

(1) #15: Lower Yuba River Juvenile Chinook Salmon Life History Evaluation ($762,270).

Funds were provided to the South Yuba River Citizens League (SYRCL), a non-profit organization acting as a fiscal agent for the California Department of Fish and Game. This study builds upon our knowledge of the life history and population trends of juvenile Chinook salmon in the Yuba River, so that improved adaptive management of the river, including fish restoration projects and appropriate in-stream flow regimes, can be achieved.
https://ecosystem.calfed.ca.gov/WRRC/CalFed/people/idrury/proposal/100040305779/compilation-b

(2) #24: Lower Butte Creek Project: Sutter Bypass - Willow Slough Weir Fish Passage Project - Preliminary Engineering Investigation ($155,000).

Funds were provided to the Department of Water Resources to provide a preliminary engineering investigation to develop final design and construction of a fish passage solution on the Sutter Bypass East Borrow Canal into Willow Slough on the Lower Butte Creek.
https://ecosystem.calfed.ca.gov/WRRC/CalFed/people/kevindossey/proposal/100206045411/compilation-b

(3) #39: Continued Studies for the Knights Ferry Gravel Replenishment Project, Phase 2 ($139,744).

Funds were provided to Carl Mesick Consultants to continue the environmental studies for the Knights Ferry Gravel Replenishment Project which was a 1998 CALFED demonstration project. This study investigates the benefits and methods of restoring spawning habitat for fall-run Chinook salmon at 18 restoration sites in the Stanislaus River between Goodwin Dam and Oakdale.

https://ecosystem.calfed.ca.gov/WRRC/CalFed/people/Carl%20Mesick/proposal/99903741100/compilation-b

(4) #98: A Feasibility Investigation of Reintroduction of Anadromous Salmonids Above Crocker-Huffman Dam on the Merced River ($160,758).

Funds were provided to the Natural Resource Scientists, Inc. to examine the biological and physical technical issues associated with the potential for establishing migratory passage and fish protection at Crocker-Huffman Dam and investigate the biological production potential of the riverine habitat between Crocker-Huffman and Merced Falls dams for anadromous salmonids .

https://ecosystem.calfed.ca.gov/WRRC/CalFed/people/nrs3/proposal/100180156358/compilation-b

(5) #176: Test and Demonstrate a Portable Alaskan Weir to Count and Characterize Runs of Anadromous Salmonids in the Stanislaus River ($659,590).

Funds were provided to the Tri-Dam Project to test and demonstrate the practicality of using a portable resistance -type weir to determine total Chinook salmon and steelhead escapement on the Stanislaus River, to collect data on Chinook salmon not currently collected and serve as a measure of accuracy of traditional carcass count population estimates.

https://ecosystem.calfed.ca.gov/WRRC/CalFed/people/spcramer/proposal/99982305721/compilation-b

(6) #195: Demonstration Project to Test a New Interdisciplinary Approach to Rehabilitating Salmon Spawning Habitat in the Central Valley ($254,720).

Funds were provided to the University of California, Davis for a project demonstration of an integrated approach to designing in-stream spawning gravel rehabilitation projects on the Lower Mokelumne River. Three applications will show that gravel augmentation for enhancing spawning habitat and fluvial complexity is greatly improved when aided by the new integrated design approach.

https://ecosystem.calfed.ca.gov/WRRC/CalFed/people/gpast/proposal/100033539467/compilation-b

(7) #210: Sex-reversal in Central Valley Chinook salmon: occurrence and population genetic consequences ($211,936).

Funds were provided to the University of California, Davis to provide management agencies with information regarding the impact sex-reversed fish have on reproduction, population genetics and thus, population persistence of fall-run Chinook salmon.

https://ecosystem.calfed.ca.gov/WRRC/CalFed/people/bpmay/proposal/100049132159/compilation-b

(8) #245: Comprehensive Assessment of Genetic Population Structure and Diversity for Central Valley Chinook Salmon ($385,869).

Funds were provided to the NOAA, Southwest Fisheries Science Center to describe population structure and the distribution of genetic variation for Central Valley Chinook salmon populations to help guide recovery and restoration efforts.

https://ecosystem.calfed.ca.gov/WRRC/CalFed/people/carlosjg/proposal/100231016727/compilation-b

(9) #260 Yuba Goldfields Fish Barrier Replacement Project ($100,834).

Funds were provided to the Yuba County Water Agency to provide for the construction of an exclusion device to prevent the migration of Yuba River Chinook salmon into the Goldfields .

https://ecosystem.calfed.ca.gov/WRRC/CalFed/people/Yuba%20Water/proposal/100109256466/compilation-b

Listed below by geographic area from north to south are some FY 2002 restoration project accomplishments:

(1) Accomplishments in the mainstem Sacramento River watershed include: a) a feasibility study for floodplain restoration on the La Barranca unit of the Sacramento National Wildlife Refuge, where a dysfunctional levee, gravel mining pits, and non-native vegetation were highlighted as areas of concern; and b) continued genetic research of winter-run Chinook salmon (researchers are developing, molecular genetic techniques focused on the preservation of the genetic integrity of endangered salmon in a supplementation program).

(2) Accomplishments in Battle Creek watershed in FY02 include: a) continuation of Phase II of the watershed stewardship project, where a watershed assessment is underway and available watershed data is being compiled into a Klamath Resource Information System (KRIS) computer program; b) the CNFH re-evaluation process where public and interested parties identified 56 alternatives for CNFH management and operation and where integration of hatchery and natural fish restoration is the desired outcome, c) completion of an environmental education project for school children and adults in the watershed area, and d) initiation of a stakeholder and agency driven watershed group known as the Greater Battle Creek Work Group where a Memorandum of Agreement was signed and members will have voting status.

(3) Accomplishments in Antelope, Mill, Deer, Big Chico, and Butte creek watersheds include: a) establishment of a three-year contract with Department of Water Resources for the continued operation and maintenance of real-time flow and temperature monitors on each creek; b) construction of 14,500 feet of fence to protect riparian habitat on Deer Creek; c) preliminary engineering and environmental documents for twenty-two erosion control projects in the upper Deer Creek watershed; d) continuation of the 10-year study to evaluate the juvenile life history of spring-run Chinook salmon in Butte and Big Chico creeks and its annual report.

(4) Accomplishments in lower Butte Creek watershed include: 1) continued funding of Ducks Unlimited as the project manager of the Lower Butte Creek; *2)* completion of Phase I on all five reaches of the Project (Butte Sink, including all lands south of the Colusa-Gridley Highway and east of Butte Creek; White Mallard and Associated Diversions, including all lands south of the Colusa-Gridley Highway and west of Butte Creek; Butte Slough from the Sacramento River to the Sutter Bypass; Sutter Bypass West Side; and, Sutter Bypass East Side); 3) completion of Phase II on the Butte Sink and Sutter Bypass West Side reaches and nearing completion on the White Mallard and Associated Diversions reach; and, 4) initiation of the development by stakeholders and agency representatives of a restoration plan to address the large number of small pumping plants and multitude of diversions and weirs located on Butte Slough and Sutter Bypass East Side is underway with a Memorandum of Agreement (MOA) nearing final draft form.

(5) Accomplishments in the Feather River watershed include: 1) the evaluation of limiting factors for sturgeon and salmon passage and spawning is moving forward through the FERC settlement process for Oroville Dam relicensing.

(6) Accomplishments in the Yuba River watershed include: 1) the final design to modify the Narrows Two power plant to a 3400 cfs release capability is 90% complete. 4.5 million in CALFED 2002 PSP funding was obtained; 2) a complete year data set of adult salmonid passage at Daguerre Point Dam by the Department of Fish & Game and the South Yuba Citizens League; and, 3) a fish passage pre-feasibility evaluation.

(7) Accomplishments in the American River watershed include: 1) the River Corridor Plan for the American River is complete.

(8) Accomplishments in the Calaveras River watershed include: 1) a habitat survey with hydrographs and temperature data, aerial video and ground photography for discussing the potential suitability of the system as a whole for steelhead, and spring- and fall-run Chinook salmon in the Lower Calaveras River salmonid life history limiting factor analysis project; 2) study results from snorkel surveys by the Fisheries Foundation of California which suggested significant differences between reaches with respect to juvenile abundance, with juveniles appearing to be most abundant in the Canyon reaches; and 3) data from the gravel permeability study which indicates that egg-to-fry survival was approximately 30% in the Hogan and Jenny Lind/ Shelton reaches and which is being considered in the context of the limiting factors analysis as a whole to determine whether gravel quality would limit seeding of available rearing habitat with fry.

(9) Accomplishments in the Cosumnes River watershed include: 1) all the construction tasks of the Cosumnes River Fish Barrier Project that are required for the new fish ladder and the retrofitted fish ladder at the south and north forks of Granlees Dam, Rancho Murieta; and 2) upstream monitoring of adult fish passage.

(10) Accomplishments in the Mokelumne River watershed include: 1) all permits for the removal of the lower Murphy Creek Dam; 2) purchase of all materials for cattle exclusion fencing from riparian areas downstream of Camanche Dam; 3) three separate design scenarios were developed for placement of approximately 3,072 tons of spawning gravels in the channel; and 4) baseline sediment conditions monitored during the pre-removal of Murphy Creek Dam, providing a baseline to minimize disturbances in downstream rearing areas.

(11) Accomplishments in the Merced River watershed include: 1) Completion of the Robinson Reach flood plain restoration. This project is in the post construction (i.e., revegetation and maintenance) phase; 2) to support hydraulic modeling of fish habitat benefits of post-restoration at the Robinson Ranch Reach, the AFRP hired the USFWS's Energy and In-stream Flow Branch to conduct Physical Habitat Simulation (PHABSIM) studies of the area; 3) preliminary design engineering at the lower Western Stones restoration site; 4) active participation and leadership on the Merced River Stakeholder Group; 5) all three Adaptive Management Forums (AMF) (Tuolumne, Merced, and Clear Creek) have been completed. The Tuolumne and Merced AMF reports have been released, but the Clear Creek report and all three Final Reports will be released by December 2002; 6) water temperature modeling efforts by Merced Irrigation District are 40% complete.

(12) Accomplishments in the Tuolumne River watershed include: 1) The Tuolumne River Preservation Trust has already re-released a watershed map of the Tuolumne River Watershed and produced a land-use map. They are currently working on the outreach element (e.g.,

contacting landowners) of this contract and have filed a no cost time extension to complete this portion of the contract; 2) Channel and floodplain restoration is nearly completed at the 7/11 materials restoration site on the Tuolumne River; 3) preliminary design engineering is complete and environmental permitting and right of way has started on the Warner-Deardorff channel and floodplain restoration site; 4) environmental permitting and design engineering are complete and pre-project monitoring has started at the Tuolumne Special Run Pool 10 site; and 5) post-project monitoring of the Grayson River Ranch Perpetual Conservation Easement on the Tuolumne River is in its second year.

(13) Accomplishments in the Stanislaus River watershed include: 1) Phase 1 of the Spawning Habitat and Floodplain Restoration in the Stanislaus River which restores spawning and floodplain habitat at Two-Mile Bar has been on hold pending the acquisition of the 50-acre parcel at Two-Mile Bar. After several unsuccessful attempts at reaching an agreement to purchase the parcel from the landowner, we now have a verbal commitment and are currently awaiting the landowners signature. Restoration will begin once the sale is complete; 2) the AFRP provided funding for Stanislaus River watershed restoration planning; 3) annual Rotary Screw Trap monitoring efforts at Caswell State Park are complete and the annual report is in progress. U.S. Army Corps of Engineers Stanislaus River Parks outreach presentation to bolster awareness of fishery management issues is 90% complete.

(14) Accomplishments in the mainstem San Joaquin River watershed include: 1) the completion of preliminary hydraulic modeling (generated three landscape alternatives) and initiation of Phase II of a hydraulic modeling effort to evaluate proposed non-structural flood control management alternatives on the San Joaquin River National Wildlife Refuge; 2) feasibility study for developing a long-term aggregate source for San Joaquin tributary channel restoration projects is complete; and 3) CDFG study to read archived Chinook salmon scale samples from the San Joaquin Basin to be used to update a salmon population model to assist flow management alternative evaluations on the tributaries is 40% complete.

VI. Tasks, Costs, Schedules and Deliverables

A. Narrative Explanation of Tasks.

1. Program Management (USFWS-Stockton Fish and Wildlife Office (STFWO) - The USFWS AFRP Program Manager (PM) is responsible for managing the Anadromous Fish Restoration Program (AFRP). The PM is responsible for developing all grants and cooperative agreements; developing and implementing the overall program including outreach, coordinating with stakeholders, and identifying partnering funds; and selecting peer-reviewed restoration projects from the CALFED ERP Proposal Solicitation process for AFRP FY2002 funding .

1.1. Program Management (USBR/AFRP) Liaison - The USBR Liaison coordinates AFRP activities between the AFRP and the USBR and assists in developing and implementing the overall program including outreach, coordinating with

stakeholders, and identifying partnering funds.

1.2 Program Management (AFRP-STFWO) - The Assistant Program Manager (APM) reports directly to the AFRP PM and implements the Anadromous Fish Restoration Program (AFRP). The APM is responsible for developing all grants and cooperative agreements; developing and implementing the overall program including outreach, coordinating with stakeholders, and identifying partnering funds; and selecting peer-reviewed restoration projects from the CALFED ERP Proposal Solicitation process for AFRP funding .

1.3 Program Implementation (AFRP-STFWO) - The Habitat Restoration Coordinators identify restoration priorities, develop and nurture restoration partnerships, review proposals within the CALFED ERP Proposal Solicitation Process framework, recommend projects for AFRP funding, manage project deadlines and deliverables and implement the AFRP. The Assistant Habitat Restoration Coordinators assist the AFRP Program Manager, the Assistant Program Manager, and Habitat Restoration Coordinators on all AFRP work.

1.4 Program Implementation (AFRP- Red Bluff Fish and Wildlife Office (RBFWO)) - Same as 1.3 above.

1.5 Contracting/Administrative Support (AFRP- STFWO) - AFRP contracting staff process all contracts and contract modifications for projects the Stockton AFRP staff has responsibility on. Computer staff maintains AFRP computer hardware and software.

1.6 Technical Support (Sacrament Fish and Wildlife Office (SFWO) - Incremental Flow Instream Methodology (IFIM) - The IFIM biologists carry out AFRP directed IFIM studies in the Sacramento and San Joaquin basins rivers and tributaries. These activities, instream flow requirements for CVPIA, are covered under a separate program, 3406 (b)(1)(B).

1.7 Administrative Support (CVPIA- SFWO) - The SFWO provides support to the AFRP in external affairs, administration, and interagency program coordination.

2. Environmental Documentation (USFWS, SFWO-Habitat Conservation Division (HCD)) - AFRP Program Manager coordinates with Habitat Conservation Division and Endangered Species Program staffs to complete AFRP requested National Environmental Policy Act (NEPA) , Endangered Species Act (ESA), and cultural resource environmental documentation for AFRP projects. Environmental Documentation and Appraisal Review. Program Managers coordinate with appropriate offices and divisions within their respective agencies to ensure necessary environmental documentation and appraisal reviews are completed for the projects they manage as described below.

2.1 Appraisal Review (USFWS-SRFO) - AFRP Program Manager coordinates with real estate easement and acquisition appraisal support for any proposed fee title or conservation easement acquisitions the AFRP is lead on.

2.2 Endangered Species Division (USFWS- Sacramento Valley Branch, Endangered Species Division (EDS)) - AFRP Program Manager coordinates with Endangered Species Division for any proposed restoration activities that the AFRP is lead on.

2.3. Project Funding and Implementation. As part of efforts to better integrate implementation of CVPIA and CALFED programs consistent with the

CALFED Implementation Memorandum of Understanding, the AFRP expects to identify projects through the CALFED ERP's Proposal Solicitation and review process. Therefore, the AFRP can not identify all of the projects that the program will support in 2003 until the ERP's process is complete. Projects will be identified for funding based on their contribution to the program objectives, and consistency with the priorities listed below, and in consideration of the review comments and recommendations resulting from the CALFED ERP Proposal Solicitation process. Some of the specific projects may be a continuation of previously funded projects, others will be new to the program. Project prioritization will also be closely coordinated with the USBR's Central Valley Project Conservation Program. To facilitate integration with the CALFED ERP's 2002 Proposal Solicitation and review process, the priorities listed below were included in the CALFED ERP Draft Stage 1 Implementation Plan and the CALFED ERP 2002 Proposal Solicitation Package.

Additional Funding Needs.

Additional projects which meet the above priorities will be implemented as funding allows. Priority will be given to activities that promote natural channel and riparian habitat values and natural processes, such as those affecting stream flow, water temperature, water quality and riparian areas, and to activities if they affect emigration or access to streams, such as sites of entrainment into diversions and migration barriers.

B. Schedule and Deliverables.

#	Task	Dates		Deliverable
		Start	Complete	
1.1	Program Management (USFWS-STFWO)	10/01/02	09/30/03	A revised FY2002 Annual Work Plan, a draft FY2003 AWP and selection of peer-reviewed restoration projects from the CALFED Proposal Solicitation and Review Process for AFRP FY2002 funding. See 1 above.
1.2	USBR/AFRP Liaison (USBR)	10/01/02	09/30/03	Reviews of revised FY2002 Annual Work Plan and a draft FY2003 AWP. See 1 above..
1.3	Program Management (AFRP-STFWO)	10/01/02	09/30/03	Provide grants and cooperative agreements for all selected FY 2003 restoration projects.
1.4	Program Implementation (AFRP-STFWO)	10/01/02	09/30/03	Provide geographical restoration priorities, CALFED Proposal Solicitation and review process proposals, recommend projects for AFRP funding and manage project deadlines and deliverables. Support the AFRP Program Manager, Assistant Program Manager, and Habitat Restoration Coordinators on work relative to the CVPIA.

1.5	Program Implementation (AFRP- RBFWO)	10/01/02	09/30/03	See 1.3 above.
1.6	Contracting/Administrative Support (AFRP- STFWO)	11/01/02	06/01/03	Process all contracts and contract modifications and maintain AFRP computer hardware and software.
1.7	Technical Support (SFWO-IFIM)	10/01/02	06/01/03	Provide IFIM study results for selected Sacramento and San Joaquin basin rivers and tributaries.
1.8	Administrative Support (CVPIA-SFWO)	01/15/02	09/30/03	Provide support to the AFRP in external affairs, administration, and interagency program coordination.
2.0	Environmental Documentation and Real State Planning and Appraisal Review	01/15/02	09/30/03	Final NEPA and ESA documents, appraisal review and acquisition planning for AFRP-led project.
2.1	Environmental Documentation (USFWS-SFWO-HCD)	01/15/02	09/30/03	Provide NEPA, ESA, and cultural resource environmental documentation for AFRP projects.
2.2	Appraisal Review (USFWS-SRFO)	01/15/02	09/30/03	Final real estate easement and acquisition appraisal support.
2.3	Endangered Species Division (USFWS-ESD)	01/15/02	09/30/03	Provide Endangered species assessment support.
3.0	Project Funding and Implementation	01/15/02	09/30/03	Deliverables will be listed in the scopes of work for each of the projects supported by the AFRP, including quarterly reports, draft and final planning documents, monitoring reports, and any environmental documents and appraisals necessary for project implementation.

Schedule and Deliverables - Additional Funding Needs.

To be determined based upon the number of high priority projects which are recommended for implementation through the CALFED Proposal Solicitation and review process and any directed actions proposed after the completion of the CALFED process.

C. Summary of Program Costs and Funding Sources.

#	Task	Total Cost	Funding Sources RF

1	**Program Management (Total)**	**$ 1,760,386**	**$ 1,760,386**
1.1	Program Management (USFWS-STFWO)	$ 77,852	$ 77,852
1.2	USBR/AFRP Liaison (USBR)	$ 5,400	$ 5,400
1.3	Program Management (AFRP- STFWO)	$ 106,332	$ 546,461
1.4	Program Implementation (AFRP- STFWO)	$ 546,461	$ 546,461
1.5	Program Implementation (AFRP- RBFWO)	$ 222,780	$ 222,780
1.6	Contracting/Administrative Support (AFRP- STFWO)	$ 233,280	$ 233,280
1.7	Technical Support (SFWO-IFIM)	$ 456,718	$ 456,718
1.8	Administrative Support (SWFO-CVPIA)	$ 293,933	$ 293,933
2	**Environmental Documentation and Real Estate Planning and Appraisal Review**	**$ 292,259**	**$ 292,259**
2.1	Environmental Documentation (USFWS-SFWO-HCD)	$ 144,300	$ 144,300
2.2	Appraisal Review (USFWS-SRFO)	$ 6,000	$ 6,000
2.3	Endangered Species Division (USFWS-ESD)	$ 141,959	$ 141,959
3	**Project Funding and Implementation**	**$ 2,764,986**	$ 2,764,986
Total Program Budget		**$ 5,000,000**	**$ 5,000,000**

Explanatory Notes: Total costs for each of the primary tasks shown in bold (for example, Task 1, Program Management) show the total for each of the sub-tasks shown in normal type directly below the primary task (for Task 1, Sub-tasks are 1.1 through 1.7).

Program Costs and Funding Sources - Additional Funding Needs.

Additional funding needs are dependent upon the number, value and urgency of project proposals submitted after October 1, 2002, which exceed the current budget.

D. CVPIA Program Budget.

#	Task	FTE	Direct Salary and Benefits Costs	Contract Costs	Misc. Costs	Administrative Costs	Total Costs
1	**Program Management (Total)**	**20.64**	**$1,618,963**	**$0**	**$0**	**$323,793**	**$1,942,756**
1.1	Program Management (USFWS-STFWO)	0.68	$64,877	$0	$0	$12,975	$77,852
1.2	USBR/AFRP Liaison (USBR)	0.53	$4,500	$0	$0	$900	$5,400
1.3	Program Management (AFRP-STFWO)	1.01	$88,610	$0	$0	$17,722	$106,332
1.4	Program Implementation (AFRP- STFWO)	7.60	$455,384	$0	$0	$91,077	$546,461
1.5	Program Implementation (AFRP- RBFWO)	2.29	$185,650	$0	$0	$37,130	$222,780
1.6	Contracting/Administrative Support (AFRP- STFWO)	2.66	$194,400	$0	$0	$38,880	$233,280
1.7	Technical Support (SFWO-IFIM)	3.07	$ 380,598	$0	$0	$76,120	$456,718
1.8	Administrative Support (CVPIA-SFWO)	1.56	$ 244,944	$0	$0	$48,989	$293,933
2	**Environmental Documentation and Real Estate Planning and Appraisal Review**	**3.04**	**$ 243,549**	**$0**	**$0**	**$48,710**	**$292,259**
2.1	Environmental Documentation (USFWS-SFWO-HCD)	2.00	$ 120,250	$0	$0	$24,050	$144,300
2.2	Appraisal Review (USFWS-SRFO)	0.04	$ 5,000	$0	$0	$1,000	$6,000

D. CVPIA Program Budget (cont.).

#	Task	FTE	Direct Salary and Benefits Costs	Contract Costs	Misc. Costs	Administrative Costs	Total Costs
2.3	Endangered Species Division (USFWS-ESD)	1.00	$118,299	$0	$0	$23,660	$141,959
		27.39	**$1,862,512**			**$372,502**	**$2,235,015**
3	**Project Funding and Implementation**	***0.00***	***$0***	**$2,626,737**	***$0***	**$138,249**	**$2,764,986**
Total by Category		**27.39**	**$1,862,512**	**$2,626,737**	**$0**	**$510,751**	**$5,000,000**

Explanatory Notes: Costs for each of the primary tasks shown in bold show the total for each of the sub-tasks shown in normal type directly below the primary task. Contracts and Administrative

costs are estimates, actual costs to be based on projects identified in coordination with the CALFED ERP Proposal Solicitation and review process and on the entity managing those projects.

E. CVPIA Program Budget - Additional Funding Needs.

Additional funding needs are dependent upon the number, value and urgency of project proposals submitted after October 1, 2001, which exceed the current budget.

VII. **Future Years Commitments/Actions.**

Some actions planned for FY2003 may require maintenance and/or monitoring activities in future years. This is particularly relevant for any proposed restoration projects or any multi-year survey requests. Property acquisitions (fee title or conservation easements) may require future funding for the development and/or implementation of management activities. Continuing activities should contribute towards the recovery of federal and state listed fish species and their habitats.

References

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